

What is claimed is:

1. An underwater laser processing apparatus, comprising:
an optical unit that irradiates a condensed laser beam generated by a
laser source to a certain point of an underwater workpiece; and
a nozzle having a gas exit for supplying gas to the certain point,
wherein the nozzle comprises an area surrounding the gas exit
extending to the surface of the workpiece for keeping the supplied gas
between the nozzle and the workpiece.
2. The apparatus according to claim 1, wherein a nozzle is formed
as a disk having the gas exit at the center thereof.
3. The apparatus according to claim 2, wherein a diameter of the
nozzle exceeds the diameter of the exit by more than approximately 1.5 mm.
4. The apparatus according to claim 2, wherein the nozzle has a
circular groove on the surface facing the workpiece.
5. The apparatus according to claim 1, further comprising a
welding wire exit that supplies a welding wire to the certain point.
6. The apparatus according to claim 5, wherein the welding wire
exit is a wire tip disposed in the nozzle.

7. The apparatus according to claim 1, wherein the optical unit irradiates the laser beam at an angle to the workpiece.

8. The apparatus according to claim 1, further comprising a bush that prevents a reflected laser beam from entering the laser source.

9. The apparatus according to claim 1, wherein the optical unit comprises a collimator lens that makes parallel the laser beam from the laser source, and a condenser lens that condenses the parallel laser beam.

10. The apparatus according to claim 9, further comprising a dichroic mirror that separates visible light from the laser beam and inputs the separated visible light to an image sensor.

11. The apparatus according to claim 1, further comprising an adjuster that adjusts a gap between the nozzle and the workpiece.

12. The apparatus according to claim 11, wherein the adjuster comprises a roller that rolls on the workpiece.

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14. An underwater laser processing apparatus, comprising:
means for irradiating a condensed laser beam generated by a laser source to a certain point of an underwater workpiece; and
means for supplying gas to the certain point,

wherein the means for supplying gas has an area surrounding a gas exit and extending to the surface of the workpiece for keeping the supplied gas between the nozzle and the workpiece.